Chapter 11

Illustrated *Materia Medica* Prints, Manuscripts, and Modern Books

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The vast Tibetan pharmacological literature spans several genres of medical writing, going far beyond the basics of pharmacology in the *Four Tantras* and related commentaries. It is highly varied as it deals with geographical and environmental conditions that range from moist Himalayan hills to high, arid, and mountainous zones of the Tibetan Plateau and the grasslands of Mongolia and Buryatia. Within this body of literature, only the writings on medical simples, known as *trungpe* (*'khrung sdpe*), were commonly illustrated prior to the early twentieth century. This chapter discusses five pictorial Tibetan *materia medica* works likely from between the eighteenth and twentieth centuries, comprising the widely circulated *Beautiful Marvelous Eye Ornament* by the nineteenth-century Mongolian physician Jampal Dorje as well as four lesser-known manuscripts with color drawings. They are originally from Tibet, Mongolia, and perhaps a Tibetan border region — three of them are now held in institutional libraries in Europe and India, while a still-practicing medical household in Eastern Tibet holds the fourth. Also discussed are two modern texts in the same genre, both of which have been published in Lhasa, central Tibet, one at the height of the Cultural Revolution, when possession of classical medical texts was dangerous, and the other in the post-reform period.

In this chapter I hope to show how divergent identifications of some medical materials continue, despite periodic efforts to settle on correct identifications among practitioners of different traditions and regions. As we will see, the *trungpe* genre sheds light on a Tibetan medicine practitioner's use of natural environments, offering beautiful illustrations and giving us chance to engage with doctors' and pharmacists' classificatory thinking and its changes over time.

Pharmacology beyond the *Four Tantras*

Before I turn to the illustrated works, some remarks must be made about Deumar Geshe Tenzin Phuntsog (De'u dmar dge bshes bstan 'dzin phun tshogs), whom Tibetan doctors and pharmacists consider the greatest writer on the pharmacology of Sowa Rigpa, although he was also prolific on other topics.[1] His renown is chiefly based on his seminal early eighteenth-century two-part pharmacological treatise *Stainless Crystal Garland*, or *Shelgong Shelphreng* (FIG. 11.1).[2] This went far beyond the existing knowledge of medical materials, both in terms of their number as well as in their organization and classification, and it became an important source for almost all subsequently published *materia medica* works.

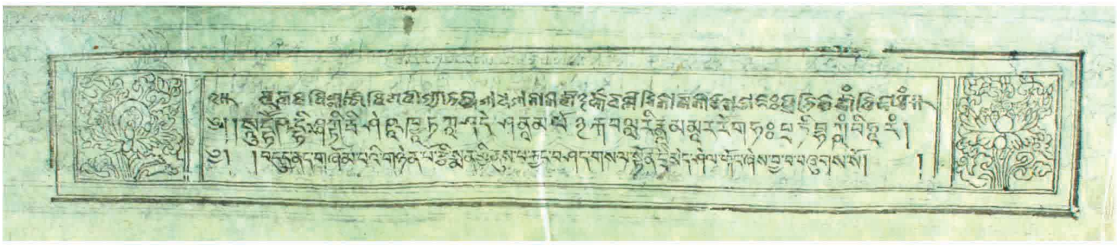
The *Shelgong*, the first part of Deumar Geshe Tenzin Phuntsog's text (completed in 1727) consists of a brief overview of thirteen — rather than the eight types of *materia medica*, described in the *Four Tantras* (see TABLE 11.1) — and discusses its main simples with regard to their *nupa*, or "power/efficacy."[3] *Nupa* here refers to the materials' action in specific conditions. He writes, for example, "turquoise clears poisons and liver fever [from the body]," and elsewhere, "stones rich in sulfur dry *muchu* [*dmu chu*, water swelling] and *chuser* [*chu ser*, yellow fluid]," thereby addressing clearly defined and established disease condition that are, among others described in the *Instructional Tantra*.[4]

The *Shelgong* is followed by the *Shelphreng* (completed in 1737), an elaborate auto-commentary that enumerates and discusses the different kinds of each simple, alternative names, and their nature, tastes, and usage, sometimes also offering a brief description of the methods applied to prepare them before compounding. For example, with reference to turquoise, or *yu* (*g.yu*), Deumar Geshe expands:

> Turquoise clears poison and liver fever [from the body]. It is a precious stone named *be ra dza*; it is the king of all precious things and stones. There are four types (…). The first is white blue and bright, the second looks like a dusty peacock's tail, the third is dark blue, the fourth one is yellowish dark blue. This is the way that Indians understand [it] (…). The way that Tibetans understand [it] is [that there are] three "old turquoises," two "intermediate turquoises," and three or eight "new turquoises." The three old turquoises are called *drug dkar*, which is white blue, bright, and sometimes also dark; *drug dmar*, which is blue and red and oily; and *g.yu spyang*, which is superior and more blue as compared to *drug dkar*. These three are the best for medicine. The two intermediate turquoises are *g.yu sngon*, which is like *drug dkar* but less bright, milky white; *bar dmar*, which is clearer than *drug dmar* but less bright. "New turquoise" comes in various shapes: *rgya g.yu* (also *g.yu ba'u*), is the new form; *g.yu ro* is the newest, strong, looks like white pebbles or sticky grains; and *drug ser*, which is less colored, is a little yellowish (…). These are never found in India, but in the far depth of the ocean where the water is not warm. During the rainy month of July, some can be found in Tibet because of floods from lakes and rivers. A few can also be found in China and Shangshung.[5]

This eighteenth-century passage illustrates the intricacies of identifying, naming, and sourcing particular kinds of precious stones for medical purposes.[6] Now imagine providing this information and even more extended discussions of several hundred items, a task which took Deumar Geshe almost ten years. In the process of completing the

Animal Medicines (I) from Jampal Dorje's *Beautiful Marvelous Eye Ornament*. Mongolia; 19th century. Part II, folio 33 *recto* & 33 *verso*. Reprinted in Śatapitaka Series (Vol. 82), New Delhi, International Academy of Indian Culture, 1971. Tibetan Buddhist Resource Center. W30452



11.1 Title page of the Chagpori edition of Dilmar Geshe Phuntsog's work on pharmacognosy, *Shelgong Shelpreng*. Chagpori, Lhasa; 1905. Ink on paper; H 7.6 × W 9 × D 54.6 cm. Tibetan Buddhist Resource Center. W1KG1573

Shelphreng, he consulted many extant pharmacology works of his time, which he refers to in the text.[7] The work was first published as a block print in Derge, at one of Tibet's most prestigious printing houses, not far away from where Deumar Geshe had established his own monastery. This he did after having returned from his studies in Lhasa and travels to Nepal and India, where he researched plants that could not, due to their natural habitats, be found in Tibet but were nevertheless used extensively in Tibetan medicine.[8]

Both the *Shelgong* and the *Shelphreng* follow Deumar Geshe's new classification of thirteen types of medicines, rather than the eight classes of the *Four Tantras*, and now include "salt medicines," "grain medicines," "water medicines," "fire medicines," and "various medicines" (TABLE 11.1). This reclassification makes explicit, for example, the medical nature of food, salt, and water, which had for centuries been seen as such but classified and discussed in the *Four Tantras* and the *Blue Beryl* commentary primarily under headings such as "dietics" in the first branch of the "tree of treatment" (see chapter 1), or in the case of different kinds of waters, in chapters on external therapies in the *Last Tantra*. And vice versa, medicines are "eaten" by Tibetans, rather than taken, using the same verb as for eating foods — something that both Tibetan and Chinese share in their concept of medicine as food and foods as medicines.[9]

Beyond his reclassification, another important innovation by Deumar Geshe was to separate discussion of the *nupa* (power/efficacy) of *materia medica* (which is in the first part of the text and related to specific disease categories) from that of its *ngobo* (nature/essence), that is detailed description of physical forms and types of medicines (which is in the second part), both of which in the *Four Tantras* and the *Blue Beryl* had been considered in a combined context.[10] He thereby set the stage, writes Denise Glover, "for the prominence of physical characteristics in the classification of *materia medica* in later texts," which is discussed in this essay.[11]

The *Stainless Crystal Garland* is a sizeable text, with the print edition of the Chagpori blocks from the wood-snake year of 1905, for example, comprising more than 200 folios.[12] Compared to the elaborately illustrated early modern Chinese medical classic on pharmacology, the *Bencao Gangmu* by Li Shizhen (1518–1593),[13] the Tibetan equivalent is almost entirely text, only the title page of this edition featuring an illustration of two symbolic plants. What the sixteenth-century Chinese and eighteenth-century Tibetan pharmacologists had in common in their treatment of medical materials is that they both wanted to provide encyclopedic coverage of the natural world around them. This could then form a basis from which to effectively cure human ailments.

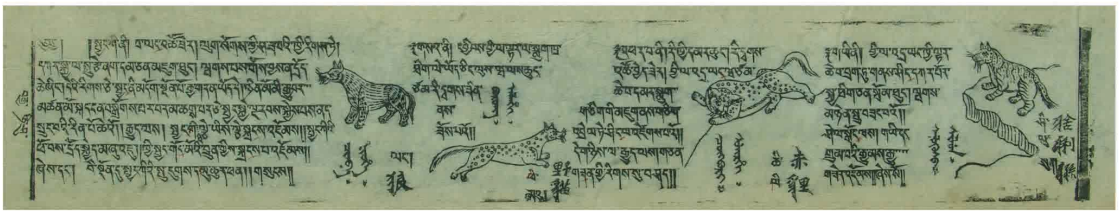
Numerous manuscript copies of the *Stainless Crystal Garland* circulated throughout Tibet and the text was later reprinted several times. Deumar Geshe's detailed recording and new classification of medical materials, when compared to the relatively few pharmacology chapters in the *Four Tantras* and many of the commentaries, even those known for their extensive treatment of plant identification, such as Zurkhar's *Transmission of the Elders* represent a significant development for Tibetan pharmacognosy and pharmacology. The *Stainless Crystal Garland* went on to form the basis for discussion in many, if not all, subsequent Tibetan pharmacopeia works.

That said, given the pivotal role of the *Four Tantras* and the *Blue Beryl* in many medical traditions in Tibet, Deumar Geshe's thirteen-fold classification was less often repeated, least of all in premodern illustrated *materia medica* works, which tended to use the *Four Tantras*' and *Blue Beryl*'s eightfold classification of pharmacopeia and their depictions on Sangye Gyatso's Tibetan medical paintings. In their discussions of the substances, however, many pharmacological works rely heavily on Deumar Geshe's groundwork in the *Stainless Crystal Garland*, which is studied to this day in pharmacology courses at Lhasa's Tibetan Medical College and among many private practitioners and pharmacists. How it influenced eighteenth-, nineteenth-, and early twentieth-century Tibetan *materia medica* works and how their illustrations relate to Sangye Gyatos's *materia medica* plates from the Lhasa medical paintings is what we now turn to.

TABLE 11.1 Classification of Tibetan medical simples according to the *Four Tantras* and the *Stainless Crystal Garland* (*Shelgong Shelphreng*)

Classes / Types of Medicines	Tibetan	*Four Tantras* and *Blue Beryl*[1]	*Stainless Crystal Garland*
precious substances for example: gold, turquoise, coral, agate stone	*rin po che sman*	1	1
stone medicines for example: gold and silver ore	*rdo sman*	2	2
earth and soil medicines for example: gold sand and oxidized lead	*sa sman*	3	3
aromatic medicines from plants and mucilaginous substances, for example: saffron, liver, and gall bladder bezoars	*rtsi sman*	4	4
tree medicines for example: myrobalan plants, red and white sandal wood, *a ga ru* (eaglewood, *Aquilaria spp.*)	*shing sman*	5	5
"medicines from the plains"[2] for example: *ma nu* (*Inula racemosa*)	*thang sman*	6	6
herbal medicines for example: *tig ta* (*Swertia spp.*)	*sngo sman*	7	7
animal substances including flesh, bones, and horns	*srog chags sman*	8	9
salt medicines for example: rock salt, sea salt, and black salt	*lan tshwa'i sman*	X	8
grain medicines for example: rice, millet, barley, and beans	*zhing skyes sman*	X	10
water medicines for example: drinking water, medicinal waters, water from hot springs	*chu'i sman*	X	11
fire medicines for warming treatments and as used in medical processing, for instance when reducing substances to ash	*me'i sman*	X	12
various medicines for example: mineral ashes and concentrated medicinal preparations and decoctions	*gdus pa'i sman*	X	13

1. Barry Clark (1995) *The Quintessence Tantras of Tibetan Medicine.* (Boston: Snowlion), 131; Men-Tse-Khang *Basic Tantra and Explanatory Tantra*, 202; Sangye Gyatso 1982. **2.** Note there is much debate on the English translation and meaning of the category of *thang sman*. For example Dawa translates this as "medicines with strong roots," Dawa. *A Clear Mirror of Tibetan Medicineal Plants*. Vol. 1. Rome: Tibet Domani. Dash translates it as "decoction medicine," Bahgavan Dash *Encyclopaedia of Tibetan Medicine: Being the Tibetan text of Rgyud Bzhi and Sanskrit restoration*. Delhi: Sri Satguru Publications. I follow Pasang Yontan Arya (1998) in his translation of *thang sman* as "medicine from the plains," see Pasang Yontan Arya (1998) *Dictionary of Tibetan Materia Medica* Delhi: Motilal Banarsidas Publishers, xiv, and personal communications. **3.** See above "animal substances" are listed eighth in the *Four Tantras* and ninth in the *Shelgong Shelphreng*.



11.2 Medicines Derived from Wild Animals from Jampal Dorje's Materia Medica text, *Beautiful Marvelous Eye Ornament*, Part I. Tibetan Folio Number 120 *recto*. Mongolian Edition (origin unknown); 19th century. Ink on paper; 174 ff, 54.5 × 10.3 cm. Private Collection, Mongolia

Jampal Dorje's *Beautiful Marvelous Eye Ornament*

The beautifully executed woodblock-printed text on Tibeto-Mongolian pharmacognosy,[14] the *Beautiful Marvelous Eye Ornament* by the Mongolian Jampal Dorje, is visually astounding — in folio after folio we see lively depictions of animals, plants, minerals, and so on. One of this work's remarkable features is that each of its *materia medica* items and accompanying text is glossed in three languages, Mongolian, Manchu, and Chinese (FIG. 11.2). To the Manchu is added a rough phonetic pronunciation guide in Tibetan. The immediate benefits of such multilingual renderings can be appreciated when we consider the home region of the author. Jampal Dorje (Mongolian: Jambal Dorji) belonged to the Naiman Banner of the Ju Uda League in what is today a province of Inner Mongolia, People's Republic of China. However, in the centuries prior to the area's full integration into Communist China in 1947, it had been a thoroughfare for trade and knowledge exchange between Tibet and Mongolia and between China and Inner Asia.[15] Multilingualism in this part of the world was useful on every level, not least in the acquisition and trade of medical materials and the exchange between practitioners of Tibetan and Chinese medicine.[16]

It is a shame that we know so little about the layman Jampal Dorje.[17] This is partly attributable to the destruction of most literature about him during early Communist reforms in Inner Mongolia.[18] The whereabouts of the original wooden blocks — if they survive — is unknown to me, but original prints from different print houses can be found in the private collections of two Mongolian doctors in Ulaanbaatar, Republic of Mongolia, in a Russian state collection in St. Petersburg, and several other private collections.[19]

Much of the content of the *Beautiful Marvelous Eye Ornament* derives from Deumar Geshe's *Stainless Crystal Garland*, but it is far from a direct copy or simply an illustrated version of it. In the colophon it refers to other classics in Tibetan medicine[20] and works by Sumpa Kenpo, who has been credited with propagating the "Ayurvedic tradition among the Mongols."[21]

In structure, the *Beautiful Marvelous Eye Ornament* consists of two parts: the first, after a brief introduction, gives Tibetan descriptions of *materia medica* items next to their illustration and their multilingual glosses. At the end of this extensive section, which is in many ways similar to the *Shelphreng*, the author adds a section on external therapies, where he includes illustrations of instruments as well as charts of the so-called topographical lines of the body and moxa points, clearly copied from the Tibetan medical *thangkas*.

The second part of the work begins with a creative adaptation away from the usual layout of the three "unfolded trees" on health and illness, diagnosis, and treatment, as originally depicted in the Lhasa *thangkas*. Instead, Jampal Dorje divides these into eight trees, in the process enabling them to fit onto the small space of a Tibetan book page (*peja*). Figure 11.3 depicts the upper and lower parts of the tree on the body in health on the left and on the right illness. Thus simplified, they can be carved onto wood and printed on the relatively small space of the folios. There then follows the depiction of all *materia medica* found in the first part — *Shelgong* — of the *Stainless Crystal Garland*, but this time with Tibetan-language captions only and no accompanying text that would include any of Deumar Geshe's discussion of the materials' efficacy (FIGS. 11.21–11.24). *Beautiful Marvelous Eye Ornament* ends with several folios displaying illustrations of instruments used in Tibetan external therapies and minor surgery (see FIG. 4.22), clearly copying a plate of a Tibetan medical painting. Finally it repeats the "topographical lines" of the body and moxibustion and bloodletting charts from the first part of the work.

Although not mentioned explicitly, it is likely that Jampal Dorje was aware of Ming-dynasty illustrated *materia medica* works from China and might have seen some of them, perhaps even editions of Li Shizhen's sixteenth-century *Bencao Gangmu*.[22] The style of some of the depictions in the *Beautiful Marvelous Eye Ornament* seem very close to their rendering in *Bencao Gangmu* — and in some cases, more so than to the *materia medica* depictions in Desi Sangye Gyatso's Tibetan medical paintings (namely Plates 25 to 35 in the Lhasa set, and Plates 23 to 33 held in the Ulan Ude set of the Tibetan medical paintings).[23]

And although in parts very close to the *Shelphreng* volume of Deumar Geshe's *Stainless Crystal Garland*, the *Beautiful Marvelous Eye Ornament*[24] does not follow the thirteen-fold classification and identification of materials. An in-depth study is necessary to work out exactly the relationship between the two works. Although closely matching the *Stainless Crystal Garland*, most of all in the content of its *materia medica* descriptions, Jampal Dorje's *Beautiful Marvelous Eye Ornament* is clearly the product of an independent mind, and in many ways departs from both the *Four Tantras* and *Blue Beryl* traditions as well as from the *Stainless Crystal Garland*, even if he states in the colophon that these formed the basis for his work. It follows the *Four Tantras*' and *Blue Beryl*'s eight-fold categorization of medical simples (see TABLE 11.1) but differs substantially from them in its subcategories. For example in addition to "natural earths" and "manufactured earths," listed by Sangye Gyatso under "earth medicines" in the *Blue Beryl*, here Jampal Dorje adds "salt medicines" (*lan tsha'i sman*), which is one of the *Shelgong*'s newly introduced (thirteen) classes of medicines, making up a whole category there.[25] Examples of medical materials from Jampal Dorje's eight principal categories can be seen in Figures 11.4–11.11, Figures 11.20 and 11.24, and in the title pages of each chapter of this publication. They are reprinted here from two different editions.

Examples from within one of these eight classes, namely animal substances, can be used to illustrate how in the *Beautiful Marvelous Eye Ornament*, Jampal Dorje reconfigured both the *Four Tantras*' and the *Blue Beryl*'s classifications. In contrast to the *Blue Beryl*'s classification according to the parts of the animals used (i.e., horns, bones, meat, blood, bile, fat, brain, skin, nails, hair, urine, droppings, etc.), Jampal Dorje focuses in most cases on the morphology of the whole animal and its habitat. He newly classifies animals into: clawed birds, beaked birds, herbivorous animals, wild animals, "power animals" (magical animals), domestic animals, creatures living in holes and burrows, and those that "thrive in moisture" (FIGS. 11.11–11.19). Such reclassifications are common throughout the work and can be found within all of his eight categories of *materia medica*.

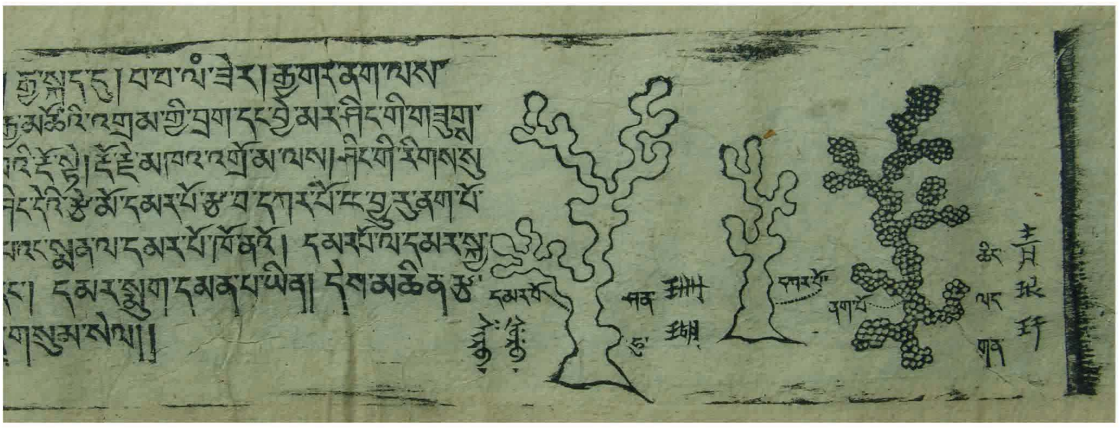
There are some delightful curiosities in the text, for instance the illustration of the Yeti (FIG. 11.19), referred to as the "wild human," *migon* (*mi rkon*). The "wild human" here is described as a "bear-like human," whose powers are great. Its flesh is of sweet taste, curing numbness caused by wind, and curing cold in the stomach. It gives strong will power, keeps the body light, and makes it live for a long time. The Chinese pictogram accompanying the illustration is exactly the one we find in Li Sizhen's *Bencau Gangmu*, where the Yeti is described as a "human being-bear," who can uproot trees, scares even tigers, and catches humans, but no medicinal qualities relating to its flesh or other properties are mentioned.[26]

The second and artistically very different part of the *Beautiful Marvelous Eye Ornament*[27] depicts in similar detail but without accompanying descriptions, all the substances found in each of the eight categories in the first part of the work (FIGS. 11.20–11.24). Perhaps this part was used to aid students in the memorization of *materia medica* names. In only a few cases are Chinese and Mongolian terms added.

The illustrations of *materia medica* in the *Beautiful Marvelous Eye Ornament* reflect the legacy of Desi Sangye Gyatso's *materia medica* paintings, influences from Chinese illustrated pharmacopeia traditions, as well as the

11.3 Two Trees of the Body in Health and Illness from Jampal Dorje's *Beautiful Marvelous Eye Ornament*, Part II. Tibetan folio number 2 *recto* & *verso*. Sonam Kunduling Monastery, Inner Mongolia; 19th century. Ink on paper; 34 ff, 59.5 × 11.7 cm. Private Collection, Mongolia

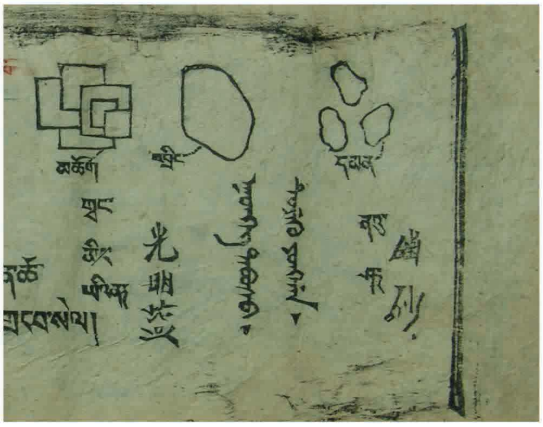
The two branches of the trees of Tibetan medical paintings are here depicted as two individual trees.



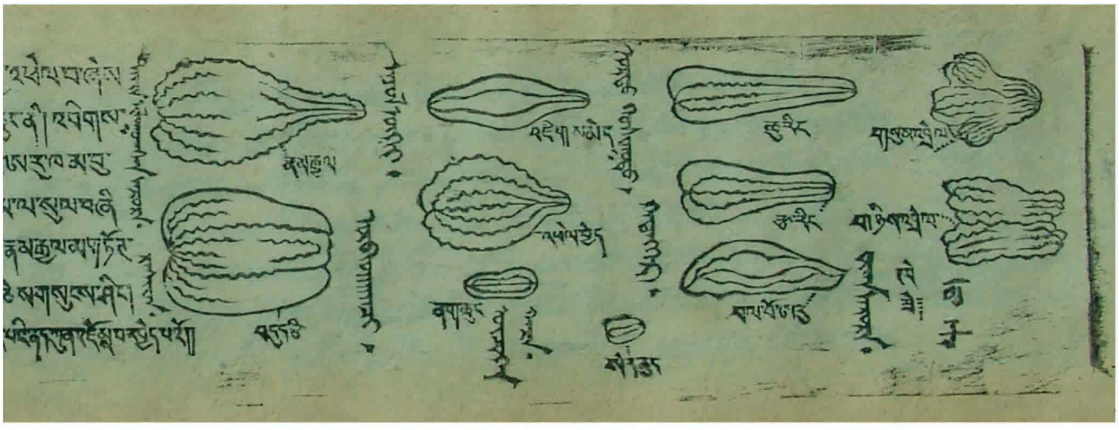
11.4–11.10 Details from Jampal Dorje's *Beautiful Marvelous Eye Ornament*, Part I. Mongolian Edition (origin unknown); 19th century. Ink on paper; 174 ff, 54.5 × 10.3 cm. Private Collection, Mongolia

11.4 Precious Substances: Coral. Tibetan folio number 18 *verso*.

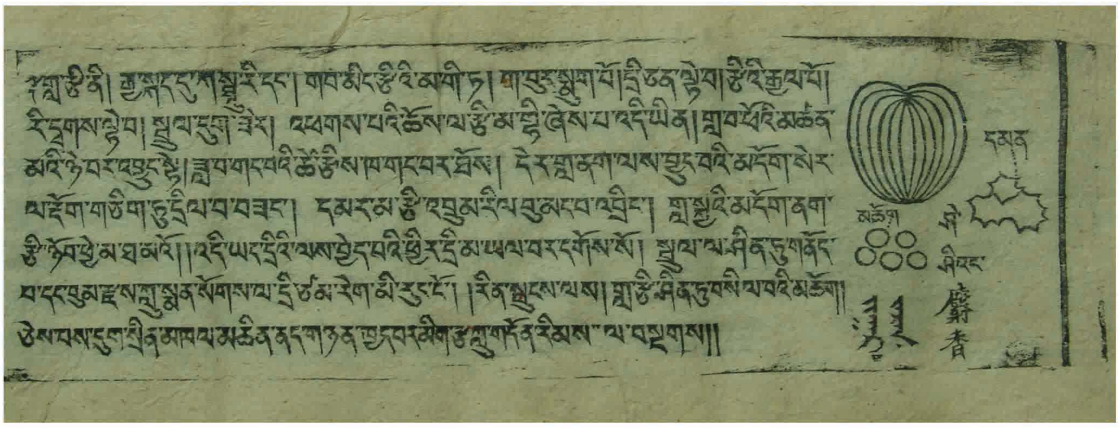
11.5 Stone Medicines: Mercury Sulfide. Tibetan folio number 30 *recto*.



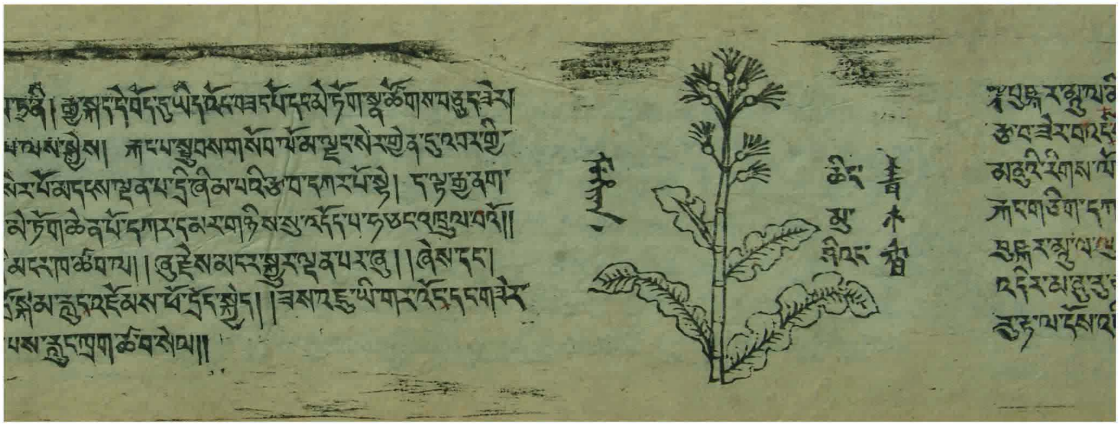
11.6 Earth Medicines: Rock Salt. Tibetan folio number 32 *verso*.



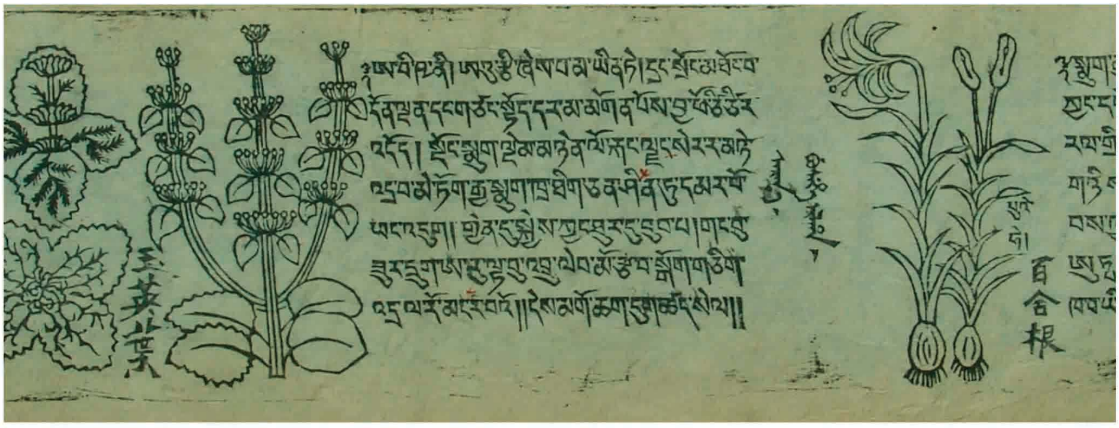
11.7 Tree Medicines: Six Types of Myrobalan — *Arura*. Tibetan folio number 42 *recto*.



11.8 Aromatic Medicines from Plants and Mucilaginous Substance: Musk. Tibetan folio number 39 *verso*.



11.9 Medicines from the Plains: *Manu*. Tibetan folio number 67 *recto*.

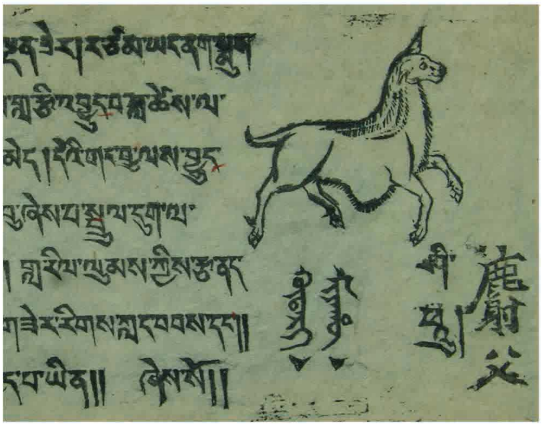


11.10 Herbal Medicines: Snake's Head Lily. Tibetan folio number 103 *recto*.

11.11 Clawed Birds — Peacock. Tibetan folio number 112 *recto*.

11.12 Beaked Birds — Parrot. Tibetan folio number 113 *verso*.

11.11–11.19 Details of "Animal Medicines" from Jampal Dorje's *Beautiful Marvelous Eye Ornament*, Part I. Mongolian Edition (origin unknown); 19th century. Ink on paper; 174 ff, 54.5 × 10.3 cm. Private Collection, Mongolia



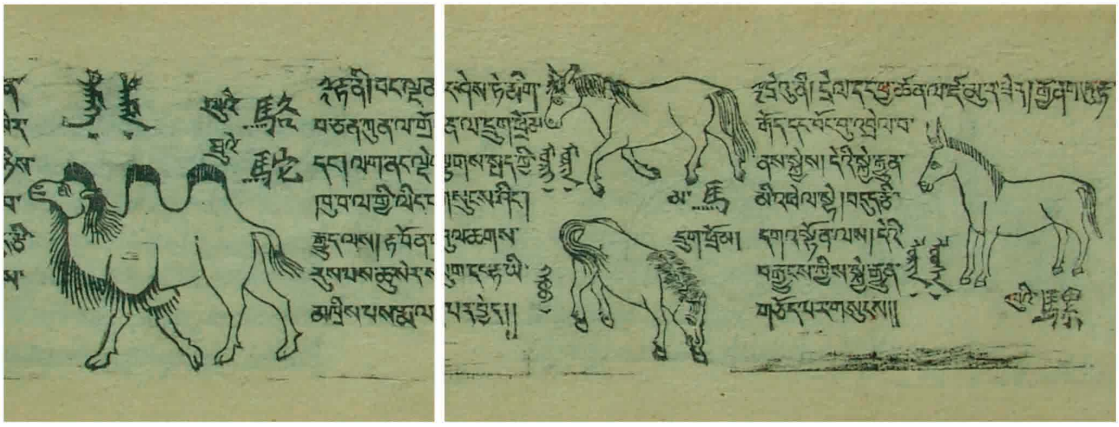
11.13 Herbivorous Animals — Musk Deer. Tibetan folio number 117 *recto*.

11.14 Wild Animals — Tiger. Tibetan Folio 117 *verso*.

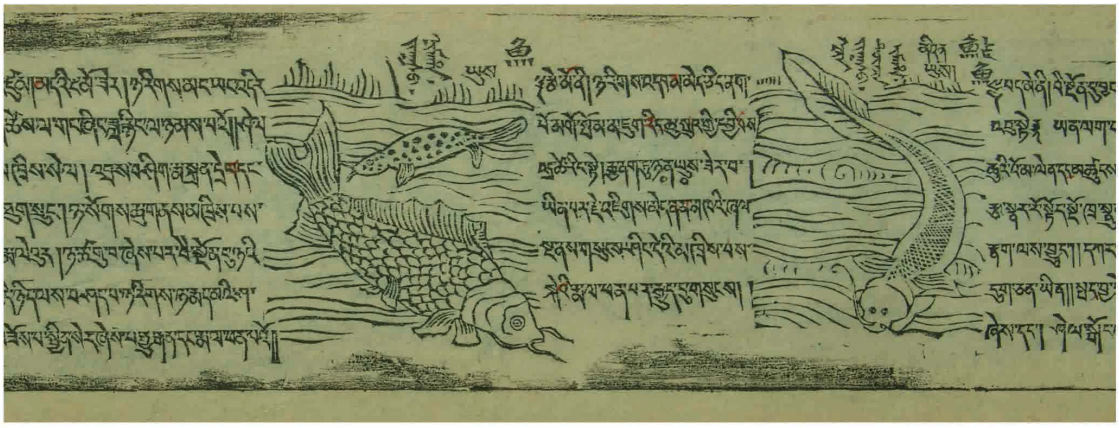
11.15 Wild Animals — Mountain Lion. Tibetan folio number 118 *verso*.

11.16 Magical Animals — Garuda. Tibetan folio number 120 *verso*.

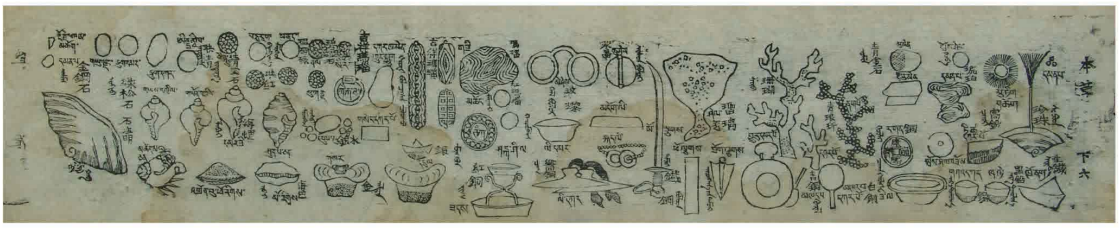
11.17 Wild Animals — Wild Man (i.e. Yeti) and Monkey. Tibetan folio number 119 *verso*.



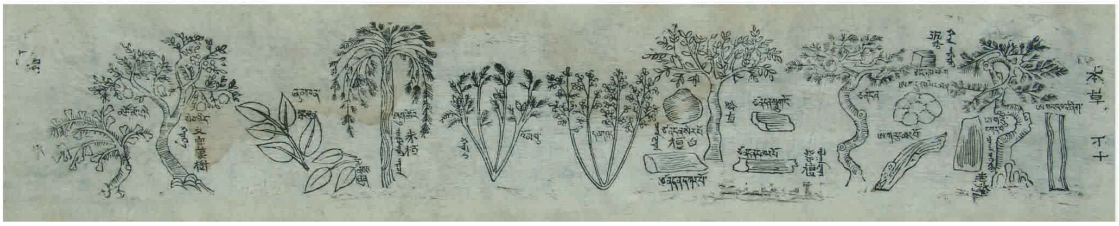
11.18 Domestic Animals — Bactrian Camel, Horse, and Mule. Tibetan folio number 122 *verso*.



11.19 Animals that Thrive in Moisture — Fish. Tibetan folio number 131 *recto*.



11.20 Precious substances. Tibetan folio 6 *verso*.



11.21 Tree Medicines. Tibetan folio 10 *verso*.

11.22 Plants. Tibetan folio 16 *verso*–17 *recto*.

11.23 Grain Medicines. Tibetan folio 21 *verso*.

11.24 Animal Medicines. Tibetan folio 24 *recto*.

11.20–11.24 Details from Jampal Dorje's *Beautiful Marvelous Eye Ornament*, Part II. Monastery of Chanlung Pandita, Inner Mongolia; 19th century. Ink on paper; 34 ff, 59.5 × 11.7 cm. Private Collection, Mongolia

independent and creative spirit of its author, Jampal Dorje. With the current absence of earlier evidence of illustrated *materia medica* works, it seems that his decision to illustrate a *materia medica* text — not a *thangka* — appears as a novelty in the Tibeto-Mongolian medical traditions. Given that it was carved onto wooden blocks and subsequently printed in Derge, Lhasa, and Beijing, it also suggests that the endeavor had considerable financial backing. As a result of this form of dissemination, a new kind of medical work was made available, one that was easier to carry and to keep than a set of large paintings. It would enable students and scholars across vast areas to engage closely with the author's identification of *materia medica*, their properties and use, and to do so in an entirely new and artful manner. Despite the stunningly beautiful illustrations, fascinating content, and manifold influences in the *Beautiful Marvelous Eye Ornament*, a fuller study of Jampal Dorje's extraordinary work remains, to date, a scientific desideratum.

Illustrated *Materia Medica* Manuscripts and Their Relation to Desi Sangye Gyatso's Medical Paintings

Among the group of four illustrated *materia medica* manuscripts, also referred to as *peri* (*dpe ri*), which I now discuss, the first two correlate closely in artistic style — and, in the case of many items, in identification of medicinal materials — with Desi Sangye Gyatso's *materia medica* plates among the Tibetan medical paintings.

A finely executed example (and the most complete copy existing) of Desi Sangye Gyatso's *materia medica* in manuscript form is the one handed down from Jamgon Kongtrul in Kham, eastern Tibet. It survived the Cultural Revolution almost intact and is there to this day in a private collection.[28] The second example is much shorter and depicts only plant materials. This is held in the collection of the Museum of the Men-Tsee-Khang, the Medicine and Astrology Institute, in Dharamsala, seat of the Tibetan government in exile.[29]

THE *CRYSTAL MIRROR OF MARVELOUS TANADUG* The *Crystal Mirror of Marvelous Tanadug*, an illustrated manuscript with ninety folios[30] from eastern Tibet, covers in full chapters 19 and 20 of the *Explanatory Tantra*, and closely corresponds to Desi Sangye Gyatso's Tibetan *materia medica* among the Tibetan medical paintings (FIGS. 3.7, 10.5, 10,6, and 10.7).[31] After its title page, the work begins with illustrations from the first registers of Plate 23 of the Tibetan medical paintings (FIG. 11.21).[32] They illustrate the source of the six tastes, which is the combination of earth, fire, water, air, and space elements, as discussed in the *Four Tantras* and *Blue Beryl*.

The manuscript then goes on to detail and visually illustrate the nature of each taste, before delving into the so-called *kyangsel* (*rkyang sel*) or single cures of the eight classes of *materia medica*. Each of the corresponding eight sections are introduced, just as on the *thangkas*, by small captions, which in the case of the manuscript are placed to the left of the page numbers. I have studied three sample folios in the class of "herbal medicines" and "animal substances," comparing these to the corresponding sections on Desi Sangye Gyatso's paintings.

The style of the manuscript's illustrations of herbal and animal medicines from the *Crystal Mirror of Marvelous Tanadug* is strikingly similar to those on Desi Sangye Gyatso's medical *thangkas* from the Lhasa set, both noting the names of substances in cursive script. However, in some instances, even doubtlessly identical-looking items are named differently in Desi Sangye Gyatso's paintings as compared to the *Crystal Mirror of Marvelous Tanadug*, reflecting differences of opinion between their creators.

This is the case in the depiction of a group of plants named *shimthig* (*zhim thig*), most likely varieties of the so-called Black and White Hoarhound. While both the *thangka* and the illustrated manuscript depict identical drawings of their five varieties,[33] their classification into "inferior" and "superior" varieties as well as some of their actual names differ.[34] In most instances, the *Crystal Mirror of Marvelous Tanadug* also offers a short textual description of an item's appearance, tastes (*ro*), post-digestive tastes (in some cases), and its therapeutic power/efficacy, or *nupa*. This text is usually found to the right of an illustration. For the case of "white superior" (*zhim thig*) the accompanying notes relate:

> It clears eye disease. Its leaves are black and coarse, and grow closely tied in with the branches, its trunk is square [shaped] and features small outgrowths, the flowers are dark brown. The fruit color is black and [fruits] have the shape of triangles. Its taste (*ro*) is sweet and its quintessential (*bdus rtsi*) effect (*nus pa*) is to clear (*gsel*) eye diseases and cataract (*ling thog* — [literally, film on eyes]).[35]

In some cases, there is simply a minor difference in spelling of plant names between the Lhasa paintings and the manuscript.[36]

With regard to many of the animal medicines depicted in both the medical paintings and the illustrated manuscript, the *Crystal Mirror of Marvelous Tanadug* seems to offer more elaborate and detailed illustrations when compared to the Lhasa paintings, but their identifications and names in many cases coincide.

On the basis of this preliminary investigation of a limited sample of the illustrated manuscript *Crystal Mirror of Marvelous Tanadug* and its comparison with Desi Sangye Gyatso's paintings, we can conclude that they overlap in significant ways — in particular with regard to artistic style and also sequence. Yet they also exhibit notable differences, particularly in terms of textual content and identification of medical items. Even if the aim and claim of Desi Sangye Gyatso was to have unified Tibetan medical traditions — not least with regard to their identification of *materia medica* — the manuscript discussed here shows this not necessarily to have been the case, and that different identification practices continued. Such a finding makes plain that debates and contentions over the identification of Tibetan *materia medica* among Sowa Rigpa practitioners continued, and continue up to the present day. From the point of view of Western biology, as well as that of Tibetan medical perspectives grounded in elemental theory, different habitats influence the typology and tastes of any given *materia medica*. This is particularly pronounced in the case of herbs and plants. Often highly adaptive to their immediate environment, these tend not only to look very different in different areas but also to demonstrate significant variations in their therapeutic properties.

The *Crystal Mirror of Marvelous Tanadug* was probably compiled during the time of the first Jamgon Kongtrul (1813–1899).[37] He was well versed in medicine, a leading Buddhist teacher, and one of the prime propagators of the Tibetan nonsectarian movement (*ris med*), which sought to overcome doctrinal and sectarian difference and divides that existed in the Tibetan Buddhist world of the mid-nineteenth century.[38] His literary legacy is vast and although having a base at Tsadra Rinchen Drak in Palpung — itself a great center for medical learning, since the time of the eighteenth-century polymath Situ Panchen Rinpoche — Jamgon Kongtrul is known to have travelled widely. He also taught luminaries, such as Ju Mipham Rinpoche (1846–1912), who continued their teacher's devotion to overcoming the various political and religious divides, and who also learned medicine from him. After Jamgon Kongtrul's death, his lineage was passed on to one of his five reincarnations, the second Jamgon, Karsey Kongtrul (1904–1952), son of the Fifteenth Karmapa.[39] During the time of this reincarnation, Palpung continued to be a medical center, and we know that Karsey Kongtrul's personal physician (*bla sman*), Yonten Gyatso (early 20th century), was an accomplished master of medicine and kept the *Crystal Mirror of Marvelous Tanadug* among other items on medicine in his library. His son, also a practicing *amchi*, inherited some of this collection and is the present holder of it.

11.21 Taste and Potency of Medicines. Plate 23 of the Tibetan medical paintings. Lhasa, central Tibet; early 20th century. Pigments on cloth; 86 × 68 cm. National Museum of the Republic of Buryatia, Ulan Ude. Photograph courtesy of Serindia

That this manuscript survived in Tibet is a great blessing, as Yonten Gyatso was imprisoned when early Communist reforms were enforced in the area. Although the details on how it survived have yet to be established, the situation in the area of Palpung was extremely perilous for Tibetan heritage throughout the early decades of Communist activities there. The second Jamgon Kongtrul had already fled into exile in 1959, but whoever remained and had earlier held high positions in Tibet's "old society" was persecuted, demoted, and in many cases imprisoned. During the Cultural Revolution, we know that what remained of Palpung's library was raided by the Red Guards, and in their wake valuable manuscripts were left scattered about the monastery area. "My father went at night to collect some of them — it was very dangerous," recalls Professor Thubten Phutsog, the eminent scholar of Tibetan medicine and literature from Kham and Professor Emeritus of Tibetan literature, himself a student of Yonten Gyatso.[40]

No exact date or name of an artist who could have been responsible for the illustrations are currently known with certainty. As the illustrations evidently mirror Desi Sangye Gyatso's paintings or their copies, which as far as we know had not until the early twentieth century been displayed outside of Lhasa, it is reasonable to assume that the illustrator must have at some point worked in Lhasa — possibly Labrang — where he could see (and thus copy) the *materia medica* plates that were housed there. It is possible that other illustrated as well as textual medical simple manuscripts were previously available in the Palpung area itself, also perhaps Jampal Dorje's printed *Beautiful Marvelous Eye Ornament*. However, it is unlikely that the illustrations in the *Crystal Mirror of Marvelous Tanadug* were copies of such earlier works. Further details about the relationship between this work and other manuscripts, as well as how it relates to the wider pharmacological and medical literature, will become known as research on them progresses.[41]

A TIBETAN ILLUSTRATED PLANT *MATERIA MEDICA* MANUSCRIPT In its artistic style a second illustrated *materia medica* manuscript again follows closely the Lhasa medical *thangkas*. It is of smaller size than those discussed so far and comprises a total of sixty-one folios, most of which have illustrations on both sides.[42] It lacks a title and page numbers, and in further contrast to the *Crystal Mirror of Marvelous Tanadug* (which is on paper), the materials used here are ink and watercolor on canvas, each sheet of which is sewn together, and it shows signs of heavy use on the sides. In terms of style, the illustrations are very similar to those of the plant items featured in Desi Sangye Gyatso's medical

11.22 Detail from a Tibetan illustrated plant *materia medica* manuscript, Supplementary plant *materia medica*. The middle flower shows *Pangyen* — Aconitum), known to be toxic to humans and animals in its unprocessed form. Dharamsala Men-Tsee-Khang, India. Photograph courtesy of Men-Tsee-Khang and Tashi Tsering

paintings, which the manuscript clearly copies. However, not all of those from the *thangkas* are found in this manuscript; it seems that subcategories of certain items have been left out, perhaps because they were not relevant to the doctors who had this manuscript made. There are no textual descriptions for the images in this manuscript, which is also the case in the Lhasa medical *thangkas*.

In terms of content, this volume can be called an herbal as it presents only plant materials, namely of the three Tibetan medical categories of "tree medicines" (*shing sman*), "medicines from the plains" (*thang sman*), and "herbal medicines" (*sngo sman*). It is most likely an illustration to one of the works by the early twentieth-century scholar Khyenrab Norbu on the identification of plant simples.[43] The overall number of items shown on the manuscript is approximately 450, with most of the drawings belonging to the category of "herbal medicines" (*sngo sman*) (see FIG. 11.22).

The provenance of this manuscript is as yet uncertain, but it was probably brought from Tibet into Indian exile and later donated to the Dharamsala Men-Tsee-Khang, when it was established in 1961 with the aim of preserving, practicing, and producing Tibetan medicine in exile.

In both of the manuscripts discussed so far, the finely detailed illustrations are expertly executed. Given the religious and political influence and widespread connections of the first Jamgon Kongtrul, the high standard of the illustrations in the *Crystal Mirror of Marvelous Tanadug* is hardly surprising. The similar standard evident in the second manuscript also makes it more likely that it had a knowledgeable and perhaps financially powerful sponsor.

We have seen so far that in terms of visual illustrations Desi Sangye Gyatso's set of medical paintings of *materia medica* was a crucial influence on later illustrated *materia medica* works. The format in which this dissemination took place differed from that of other topics of the *thangkas*. The drawings of anatomy, moxibustion, and bloodletting tended to be copied onto large sheets of paper or canvas that were then used as teaching aids in sometimes far-flung places

11.23 First two folios of an illustrated *materia medica* manuscript, starting with *Arura* plant which is considered a panacea in Tibetan medicine. Mongolia. Ink on paper; 35.5 × 8 cm. Wellcome Library, London

(FIGS. 2.7, 2.11, and 4.8), although in the exceptional case of the *Marvelous Eye Ornament* of Jampal Dorje they were also printed much smaller. *Materia medica* illustrations, meanwhile, throughout the eighteenth, nineteenth, and early twentieth centuries more typically were featured in Tibetan manuscript forms. Owing to the relatively small size of individual illustrations, they could easily fit onto manuscript-size pages, allowing students to sit and study each ingredient close-up or use them as an aid in the memorization of the *Four Tantras* classic and the *Explanatory Tantra*'s difficult to memorize chapter 20 on medical simples. Another advantage was that such works could be taken on plant collection trips, used to aid on-the-spot identification of species. That this might have actually been the case we can surmise from both works showing considerable evidence of wear and tear at the edges of pages.

The *Illustrated Medical Simples of the Four Tantras* Manuscript from Mongolia

The *Illustrated Medical Simples of the Four Tantras* manuscript from Mongolia was held in the private collection of a Buddhist Lama in the Central Mongolian province of Töv (Töv aimag) before it was acquired by the Wellcome Library, London. The Lama belonged to the Gelugpa monastic order and also possessed several manuscripts with notes for ritual music and on astrology. However, the circumstances of the production or use of the manuscript in situ remain unknown. That the text came from the collection of a Tibetan Buddhist monastic, however, lends credence to the argument that medicine was an essential part of a Buddhist scholarly education.[44]

Originally consisting of fifty-three folios, the Tibeto-Mongolian manuscript now comprises forty-eight folios (each 30.5 × 8 cm),[45] illustrated on both sides and held together by a square cloth of thin blue silk brocade. Most of the medical simples are drawn in black ink and were then colored with watercolor. Accompanying name labels and texts are also written in black ink, mainly in the Tibetan print script with a few exceptions in cursive script. It appears that the illustrations were carried out by a semi-professional artist, while the Tibetan spelling and writing is scholarly throughout.

This Tibeto-Mongolian manuscript references the *Four Tantras* in its title[46] and also describes many of the medical simples found within it. Nevertheless, it deviates significantly from its apparent parent text in a variety of ways. Most obvious are the differences in descriptions, sequence, classification, and numbers of the medical materials. For example, the manuscript opens with an illustration of the plant *Arura Namgyal*, the "Victorious Myrobalan" (FIG. 11.23), signifying this plant's and its related group's important status

11.24 Folio 44 on animal materials from an illustrated *materia media* manuscript. Mongolia. Ink on paper; 35.5 × 8 cm. Wellcome Library, London

as Tibetan medicine's panacea; the plant is also held in the Medicine Buddha's right hand. This is in contrast to the class of precious substances, with which the *Explanatory Tantra*'s chapters on *materia medica* begin the eight-fold classification of medicines.

Further in this Tibeto-Mongolian text, descriptions of the simples are seen to vary in length, content, and detail; however, generally a short description is given of physical characteristics, the environment where a plant grows or a simple is found, their therapeutic properties (*nupa*), and usage. These descriptions are not mere copies of what can be found in either the *Four Tantras* or the *Blue Beryl* — compared to these two texts, this Tibeto-Mongolian manuscript gives more detailed descriptions of some items.

Furthermore, the manuscript depicts more than 460 items, taking in all classes of medical materials, which is more than the *Four Tantras*. The logic behind the choice of what is illustrated in the Tibeto-Mongolian manuscript has yet to be fully elucidated, yet it seems to be probable that, again, those items most relevant for local purposes and perhaps also locally more easily available or considered prestigious were chosen.

From the varying styles within the text it is evident that several different hands were responsible for the final manuscript. We cannot, therefore, make any overarching judgment regarding the artistic influences that acted upon it. It seems that only the first and the last few folios show clear signs of influence from Desi Sangye Gyatso's Lhasa medical paintings. Before the early twentieth century, an encounter with them could have taken place only at the Chagpori in Lhasa — perhaps Labrang — which is not improbable given how many Mongolian monks and doctors came to study in and around these places and how many other Tibetan texts were brought back to Mongolia. Depending on the actual dating of the manuscript, which is most likely from the late nineteenth or early twentieth century, artists could also have copied some of the items from a reproduction of the Lhasa set held in Buryatia.[47]

It is clear that the style of the folios closely correlates in style to the *thangka* paintings and that the authors of the folios copied some of the items, even if in the original *thangkas* — especially when depicting plants and animals from far-away places — they were evidently incorrect. An example of this is the drawing of a rhinoceros (see FIG. 11.24, far left) that sits next to accurate depictions of animals endemic to the high Tibetan Plateau and Mongolia, such as frogs, otters, and the Tibetan Hodgson's antelope.

In the middle part of the manuscript, with some exceptions, the drawings are less sophisticated and less smoothly executed. This might be an indication that only some of the people involved in producing this composite manuscript actually had first-hand experience of the *thangkas*, with others relying on accounts to produce the images. With this in mind, what might be replacement images for a lost middle part of the manuscript[48] could have been based on observation of medical items locally available or following other illustrations. Perhaps surprising, the illustrations in this part of the Tibeto-Mongolian manuscript are not particularly close to those of the renowned medical text of Mongolian origin previously discussed, namely Jampal Dorje's *Beautiful Eye Ornament*.

Untitled *Materia Medica* Manuscript from the Tucci Collection

The last illustrated manuscript to be discussed here is perhaps not the most beautiful of the four (FIG. 11.25). Nevertheless, it is interesting because of its local character, its complete absence of reference to or seeming influence from the *thangkas* of Desi Sangye Gyatso, and its likely greater age.

This illustrated *materia medica*, without a title page, is currently held in the Fondo Tucci Archive at the library of the

11.25 Details from an illustrated *materia medica* manuscript, Folio 10 verso. Origin unknown; date unconfirmed. Ink on paper; 24 ff, 28×8.5 cm. Tucci Collection, Rome

Istituto Italiano Africa e Oriente (IsIAO), Rome. It forms part of the collection of an eminent Italian Tibetologist, Giuseppe Tucci (1894–1984), who entrusted the institution with much of the material he had collected from several trips to Tibet and the Himalayas.[49] Alessandro Boesi, who translated the manuscript from Tibetan to Italian, and who is working on an English translation, has studied its contents in depth.[50] Here I (very briefly) summarize his findings: the collection has twenty-four folios remaining of the original thirty, which depict and discuss 180 medicinal plants, with a few additional drawings showing medical instruments and deities. Most of the items are labeled and described in cursive script, outlining name, synonyms, morphological features, habitat, and curative properties of the plants. In some interesting cases, Boesi reports associations with Buddhist and Bon divinities, and plants are presented as their magical creation (*sprul*) or recipients of their blessing (*byins labs*). The manuscript also contains other legends describing the magical creation of plants for human benefit.

In the overwhelming majority of instances, the classification, sequence, and content of the items in the Tucci manuscript do not follow the classifications, identification, and description of *materia medica* found in the pharmacology works used by many Tibetan *amchi* and *menpa* throughout the Tibetan cultural world. Boesi writes that only a few notably short passages in the manuscript are also present in the *Shelgong* and *Blue Beryl*; he goes on to suggest that even these might have derived from passages of an earlier work that the Tucci manuscript as well as the *Shelgong* and *Blue Beryl* all subsequently refer to. As a consequence, he asserts, no firm composition date can be established for the Tucci manuscript.

In contrast to the *materia medica* works outlined above, the plant illustrations are vague, Boesi remarks, with some of the plants discussed not found in any other classical Tibetan medical texts. The scope of this work, he concludes, was "to catalogue the local *materia medica* so that medicinal plants could be easily collected and used."[51]

Intriguing questions regarding this manuscript remain: Where where did it come from? What author could take the scholarly liberty of failing to reference common pharmacological works, seen (still) as the gold standard of Tibetan pharmacology throughout a vast cultural sphere?

Sadly, Tucci left no record of where he found and bought this manuscript. Boesi thinks it likely to have come from southern Tibet, Sikkim, or the northwestern regions of Nepal, as several of the synonyms given do not appear to be proper Tibetan, indicating the creator might have had to use alternative terms when acquiring the plants. As far as I am aware, the only period that Tucci spent significant time with a Tibetan *amchi* was in Gyantse, central Tibet, where in 1937 he befriended an educated local medical doctor. As such, the origins of the Tucci manuscript remain obscure.

Recent Illustrated *Materia Medica* Works

The importance of the Tibetan genre of medical simples texts (*trungpe*) and the visual representation of single *materia medica* has continued through the twentieth century to the present, shaped in a context of exchange between different scientific and medical communities and evolving means of visual technologies and publishing. With one notable exception,[52] illustrations in these modern *trungpe* have now largely been replaced by color photography, and most materials have, in addition to Tibetan classifications, also been identified according to Latin botanical classifications. Both old and new *trungpe* are consulted, edited, and created by students and practitioners alike, and they have taken on particular relevance in some parts of Nepal and Tibet, in order to document and protect endangered species used in Tibetan medicines, which are disappearing owing to a range of factors, including environmental change and the industrialization of Tibetan pharmaceutical production, discussed in chapter 3.

One of the first, if not the first, modern illustrated Tibetan medical *trungpe* was published by Tibet's Military Health Division during the Cultural Revolution in Lhasa; it is entitled *Tibet's Common Chinese Medicines* (1973).[53] This handbook of over 400 plant and animal simples found in Tibet is to my knowledge the first modern publication to offer Tibetan as well as Chinese and Latin botanical identifications. It has 424 color illustrations, devoting one page to each, using a hybrid of photography and print techniques, sometimes sketches, which are printed on a white background (see FIG. 11.27). This presentation is clearly inspired by European traditions of depicting *materia medica* and classical European herbariums, where a plant is collected, dried, then pressed and presented on white sheets of paper. (The blueprint for this kind of presentation probably will be found in widespread Chinese botanical pharmacopeias of the pre-Cultural Revolution era). The work was the outcome of the first decade of collaboration in the Communist era between Tibetan doctors and Chinese medical practitioners and pharmacologists — Tibetan pharmacopeia being one of the few areas of Tibetan medicine officially sanctioned and perceived by local health authorities to have "socialist potential."[54] With no equivalent illustrated text available and the possession and use of classical texts officially banned until the early 1970s–80s, this affordable *materia medica* handbook (it initially cost only 2.20 yuan) has been widely used for the identification of plants in the field, as shown on Figure 11.28. It was also published in Chinese in the same year.[55] Many of the Indian-derived medical materials are not included, most probably in the spirit of self-reliance prevalent in official Chinese health care.

In daily use of pharmacologists and doctors, this work has now been largely replaced by the *Crystal Mirror* (*Shelgyi Melong*) by Gawo Dorje, published in 1995 in Lhasa. This hardbound and comprehensive work is of high academic and publication quality. The author engages deeply with existing Tibetan plant classifications as found in the classical texts, manuscripts, *materia medica* illustrations, and newly available reprints of older works, as well as with plant classifications of modern science, mainly Linnaean classification.[56] This work introduces as an overarching classification of all materials the tripartite European division of life-form or "kingdom" (mineral, plant, animal), when previously, as we have seen, Tibetan classifications in the pharmacological literature relied on a number of different morphological, geographical, and other features in grouping materials into either eight or thirteen classes. Furthermore, morphological features here take precedence as organizing principles over those of nature, or essence, and potency.[57]

11.26 Tibetan Pharmacopeia *Materia Medica of Tibet and Everlasting China* in use by a Tibetan doctor in Central Tibet

11.27 The Tibetan Pharmacopeia *Materia Medica of Tibet and Everlasting China*

11.28 Photographic representation of *materia medica*, last section of Gawo Dorje's authoritative Materia Medica work *Crystal Mirror* published in 1995 in Lhasa

At the end, the work features a large section with high-quality color photographs of several hundred raw materials used in Tibetan medicine, each identified in Tibetan, Chinese, and Latin (FIG. 11.28). It begins with studio photographs of mineral medicines, followed by photographs of Tibetan plant species largely taken in the field. This way of documenting Tibetan medical plants is in stark contrast to all previous illustrations, even the 1973 publication. The plant section is then followed by photographs of animals, largely taken in situ,

with some exceptions showing European-style drawings, and samples of dried animal parts photographed in the studio.

This last photographic section of the work, I would argue, is one of the most widely appreciated and used parts of the book, and I have seen it used for identification purposes in the field and in pharmacology departments of universities, factories, and small-scale production units in Tibet, Nepal, and Dharamsala. With its depiction of *materia medica* and their identification (without accompanying text), it is in overall function and use not far away from some of the older illustrated *materia medca* handbooks discussed in this chapter.

However, aspects of Gawo Dorje's new classification scheme, such as the idea of a plant as one category that includes all of the traditionally named woody, herbal, and other kinds of medical materials has to date not caught on, and practicing Tibetan doctors and pharmacists tend to continue to refer to the traditional categories.[58] The work has inspired a host of new publications following in part Gawo Dorje's scheme of subclassification and visual presentation of *materia medica*, all seeking to provide proof for their "correct" identification of medical materials (in either, or all of the three prevalent classificatory systems of Tibetan, Chinese, and Latin classifications) by the use of color photography. There has also been some collaboration between European pharmacognosists and Tibetan pharmacology experts which has led to publication, for example, of sixty short plant monographs based on Tibetan and European classification and understanding.[59]

Yet, in the course of attempts at standardization and finding correlates between European- and Tibetan-derived classifications of *materia medica*, these modern-day texts all run into problems. This is in part because of considerable variations in the identification of medicinal plants in Buryatia in the north, Nepal and Ladakh, and across the Indian Himalayas and the Tibetan Plateau.

Furthermore, local variations and their locally used names and classification are often not mentioned at all in either classical Tibetan medical literature or botanical treatises. So far only a few but nevertheless promising efforts have been made in order to understand alternative ethno-botanical taxonomy of local fauna and flora and their relation to the classical Tibetan medical literature, and in some cases the botanical species known in modern biology.[60]

* * *

Finding an exact identification of a substance across regions has been a concern for the medical community in historical pharmacology illustrations and texts. These concerns have become heightened today, due to the stringent bureaucratic protocols and requirements within modern industrial medicine production. In such a context, when in doubt, the final word falls to laboratory staff, who identify a substance through thin-layer chromatography. Such testing has to be carried out on every batch of medical ingredients used in medicine production, if it is to be considered as maintaining the standards of Good Manufacturing Practices. As was discussed in chapter 3, a significant number of medical practitioners continue to make medicines on a smaller scale and to source ingredients for their production out in the field and in markets. For them the traditional methods of identifying medical materials — such as through appearance, habitat, and, in particular, taste — remains crucial, as do, therefore, the genre of illustrated *materia medica* works and classical texts upon which practitioners continue to rely during the process of making medicines.